UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 2

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Subject: Fulton Terminals Superfund Site (EPA ID# NYD980593099) – Cessation of Five-Year Reviews

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Purpose

Section 1.2.4 of *Comprehensive Five-Year Review Guidance*, OSWER Directive 9355.7-03B-P, notes that if notice of a five-year review (FYR) discontinuation is given in a document other than a FYR report, the Region must submit a memorandum, signed by the Regional Administrator or his/her designee, to Headquarters, providing the reason for ceasing FYRs and citing the document in which this decision was made.

The purpose of this memorandum is to provide documentation in support of the cessation of FYRs for the Fulton Terminals Superfund site, located in the City of Fulton, Oswego County, New York. Information in this document is supported by the Final Close-Out Report (FCOR), which will be finalized shortly.

Background

The site originally consisted of an "On-Property" portion, an approximately 1.5-acre parcel of land bounded on the west by First Street, on the south by Shaw Street, on the east by New York State Route 481, and on the north by a warehouse, and an "Off-Property" portion, defined by the area between the On-Property portion's western property boundary to the Oswego River (approximately 50 feet). The site is located in an industrial section of the City of Fulton. The Oswego River is used for recreation. Residences, city and county offices and several businesses are located within a 1,500-foot radius of the site.

From 1936 to 1960, the primary activity on the property was the manufacturing of roofing materials, which involved the storage of asphalt in above-ground tanks and fuel oil storage in underground tanks. From 1972 to 1977, the property was used by Fulton Terminals, Inc. as a staging and storage area for solvents and other materials that were scheduled for incineration at the Pollution Abatement Services facility located in Oswego, New York. Operations at the Fulton Terminals facility resulted in the contamination of the groundwater, soil, and sediments with volatile organic compounds (VOCs).

From 1981 to 1983, Fulton Terminals, Inc. removed several tanks as part of a voluntary cleanup program. These activities ceased in 1983 after the facility operator was fined by the New York State Department of Environmental Conservation (NYSDEC) for the improper disposal of polychlorinated biphenyls. The site was listed on the National Priorities List (NPL) in 1983.

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EPA and certain potentially responsible parties (PRPs) conducted removal activities at the site in 1986, consisting of constructing a seven-foot perimeter fence around the site, posting warning signs, removing two above-ground tanks and two underground tanks, removing approximately 300 cubic yards (CY) of visibly-contaminated soil and tar-like wastes, and excavating storm drains that were acting as a conduit for contaminated runoff to enter the Oswego River during storm events. An additional removal action was performed in 1990, which involved the construction of earthen barriers for the prevention of surface runoff from the site.

Following the completion of a remedial investigation/feasibility study, on September 29, 1989, a Record of Decision (ROD) was signed. The ROD selected excavation and low temperature thermal desorption (LTTD) to treat approximately 4,000 CY of contaminated soils located above the water table, and pumping, air stripping, carbon adsorption, and reinjection as the treatment method for the contaminated groundwater. The ROD also included the implementation of institutional controls to prevent the utilization of the groundwater at the site.

The remedial action objectives selected in the ROD include:

- ensure protection of groundwater and surface water from the continued release of contaminants from soils
- restore groundwater to levels consistent with state and federal water quality standards.

Soil Remediation

The remedial design (RD) of the soil excavation and treatment was initiated by the contractor for the PRPs in 1991.

Pre-RD sampling revealed the presence of a significant amount of contamination in the deep soil (from the water table down to bedrock). Because the contaminated soil below the water table would continue to leach contaminants to the groundwater, the Region concluded that remediating this soil would be beneficial to the long-term groundwater cleanup.

Remedial alternatives to address the contaminated soils below the water table were evaluated in a focused feasibility study (FFS) completed in 1994. Based on the results of the pre-RD sampling effort and the findings of the FFS, the Region modified the soil remedy in a 1994 Explanation of Significant Differences (ESD). The ESD called for the excavation of the VOC-contaminated soils in the saturated zone (below the water table), followed by the treatment of the excavated soils by LTTD.

Following the completion of the plans and specifications related to the soil remedy in 1995, the PRPs' contractor initiated construction of the soil remedy. The excavation, treatment, and backfilling were completed in 1996. The total amount of contaminated source material that was remediated was 10,200 CY. Post-excavation soil sampling results indicated that residual levels of VOCs in soils were well below the target cleanup levels. A Remedial Action Report documenting the completion of the soil remedy was approved on September 30, 1996. The residual soil concentrations, which are below the soil cleanup levels, are summarized in the FCOR.

Groundwater Remediation

The groundwater remedy called for in the ROD required the reduction of VOC concentrations to Applicable or Relevant and Appropriate Requirements (ARARs)[1] by pumping groundwater from the saturated sand and gravel zone underlying the site, treating the groundwater by air stripping and carbon adsorption, and reinjecting the water into the saturated sand and gravel zone.

The design of the groundwater remediation was performed from 1991 to 1994. Utilizing a mobile treatment system, an expedited pumping of the contaminated groundwater commenced on February 11, 1997. When the influent data indicated that the objectives of the expedited pumping program had been achieved, the system was shut down on May 30, 1997. During the 12-week operation period, approximately 8.8 million gallons of contaminated groundwater were extracted and treated. Subsequent groundwater sampling showed that MCLs had been achieved in the source area and groundwater modeling indicated that the Off-Property VOCs would naturally attenuate in a "reasonable" time frame (*i.e.,* within 20 to 30 years). Groundwater samples collected in 1999 indicated that the contamination levels in these wells were showing a decreasing trend. Completion of the groundwater operation and transition to long-term groundwater monitoring was documented in a September 30, 1999 Remedial Action Report.

A Preliminary Close-Out Report was approved on September 27, 1999.

Institutional Controls

The ROD included the implementation of institutional controls to prevent the utilization of the groundwater at the site. A deed restriction prohibiting the installation of wells at the site was filed with the Oswego County Clerk's office on July 31, 2009. Groundwater has been remediated to drinking water standards and this institutional control is no longer a necessary component of the Comprehensive Environmental Response, Compensation, and Liability Act response action.

Partial Site Deletion

On April 6, 2015, the On-Property portion of the site was deleted from the NPL. This deletion addressed all media for this portion of the site, namely surface soils, subsurface soils, and groundwater. Because residual groundwater contamination remained in the Off-Property portion of the site, groundwater monitoring and FYRs were still required for the Off-Property portion of the site. Information supporting the partial deletion can be found in the *Federal Register* (80 FR 5957).

Groundwater Attainment

For groundwater restoration remedies, OSWER 9355.0-129, *Guidance for Evaluating Completion*

[1]The ARARs for groundwater cleanup include EPA's Maximum Contaminant Levels (MCLs) and New York State's groundwater quality standards. The action levels established for all VOCs found at the site are 5 micrograms per liter (µg/L), with the exception of vinyl chloride (VC), which has an action level of 2 µg/L.

of Groundwater Restoration Remedial Actions, recommends evaluating contaminant of concern (COC) concentrations on a monitoring well-by-monitoring well basis to assess whether aquifer restoration is complete (*i.e.,* that the groundwater has met and will continue to meet cleanup levels for all COCs in the future). The guidance recommends that sufficient data be collected and evaluated using appropriate visual or statistical methods to make this determination.

The ARARs for the groundwater include MCLs and New York State's groundwater quality standards. The action levels established for the COCs are:

Groundwater COC	Action Level (µg/L)
1,2-dichloroethylene (DCE)	5
trichloroethylene (TCE)	5
VC	2

After completion of the groundwater remedial action in 1999, a sampling and analysis plan to assess the effectiveness of the groundwater remedy was completed. The groundwater monitoring well network included three source area (On-Property) monitoring wells (RX-1, RX-2, and RX-3) and five Off-Property monitoring wells (RX-4, RX-5, RX-6, RX-7, and FBW-3). The initial plan required three years of post-remedy groundwater monitoring (March 2000 through September 2002) to verify the successful performance of the groundwater remedy. In October 2003, the groundwater long-term monitoring was extended for an additional three years.

Groundwater samples collected from 2000-2004 showed "non-detect" concentrations for all of the groundwater COCs in six of the eight monitoring wells (RX-1, RX-2, RX-3, RX-6, RX-7, and FBW-3). As a result, sampling at these wells was discontinued and they were abandoned in 2004.

As of 2004, the two remaining monitoring wells, RX-4 and RX-5, demonstrated attainment of TCE; however, cis-1,2-DCE and VC concentrations remained above their respective cleanup levels and concentration trends were decreasing. As a result, biannual sampling continued at these two monitoring wells.

In 2006, because all of the COCs in the groundwater samples from monitoring well RX-5 had reached their cleanup levels for multiple sampling, sampling of this well was discontinued.

Through 2009, biannual sampling of monitoring well RX-4 continued to show cis-1,2- DCE and VC above their respective cleanup levels. Samples were collected from 2009 to 2017 and were used to demonstrate attainment in monitoring well RX-4, as discussed below.

Monitoring Well RX-4 VC Attainment Analysis

Six data points from 2009 through 2017 were analyzed using both a visual and statistical analysis. Specific to the groundwater meeting the VC cleanup level of 2 µg/L, a statistical analysis was conducted for the six data points and concluded that the mean concentration was 1.2 µg/L; however, due to statistical variation, the 95 percent upper confidence limit on the mean was 2.8 µg/L, slightly above the cleanup level of 2 µg/L.

Groundwater samples were collected from monitoring well RX-4 in July 2016, June 2017, and September 2017. VC concentrations were "non-detect," 0.75 µg/L, and "non-detect," respectively, and cis-1,2-DCE concentrations were "non-detect," 0.72 µg/L, and "non-detect," respectively.[2] Although the upper confidence limit was slightly above 2 µg/L, the last three data points collected in 2016 and 2017 are all below the cleanup level, with two of the three being "non-detect." As such, it was determined that the data provided assurance that the cleanup level for VC had been met in this monitoring well.

The data was also evaluated using a time-dependent trend. The trend for the six data points had a statistically significant decreasing slope providing assurance that the groundwater will continue to meet the cleanup level.

Monitoring Well RX-4 cis-1,2-DCE Attainment Analysis

Five data points[3] from 2013 to 2017 were analyzed using both a visual and statistical analysis. Specific to the groundwater meeting the cis-1,2-DCE cleanup level of 5 µg/L, a statistical analysis was conducted and concluded that the mean concentration was 3.1 µg/L; however, much like the VC data, due to statistical variation, the 95 percent upper confidence limit on the mean was 14.1 µg/L. Although the upper confidence limit was three times the cleanup level, the last three data points collected in 2016 and 2017 were all below the cleanup level, with two of the three being "non-detect." As such, it was determined that the data provided assurance that the cleanup level for cis-1,2-DCE had been met in this monitoring well.

The data was also evaluated using a time-dependent trend. The trend for the five data points had a statistically significant decreasing sloping providing assurance that the groundwater will continue to meet the cleanup level.

FYR Requirement

Three FYRs have been conducted as a matter of policy at the site, the last one in May 2014. No issues or follow-up actions were identified during the 2014 FYR. The protectiveness statement stated that "The site-wide remedial actions are protective of human health and the environment."

Conclusion

The 1989 ROD, as modified by the 1994 ESD, called for the cleanup of the contaminated soils at the site to reduce concentrations of VOCs to levels that would not cause the groundwater quality to exceed standards.

The analytical results from post-excavation soil samples collected from the excavation limits indicated that the residual levels of VOCs were well below the target levels (more than 99 percent of the pre-remedial VOC mass in the silt and clay soil layer was removed and treated during the

[2] The laboratory detection limits for VC and cis-1,2-DCE were 0.5 µg/L.

[3] The number of data points for VC and cis-1,2-DCE are different because, when evaluating attainment, one only includes data once attainment has been "initially met." This determination was made at different times for the two COCs.

soil remedy). The remediation reduced the contamination of site soils in both the unsaturated and saturated zones to levels that would not cause groundwater quality standards to be exceeded due to leaching from both the unsaturated and saturated soils. Furthermore, by removing the contaminated soil, the risk of contaminants migrating from surface runoff into the Oswego River and posing a potential risk to aquatic receptors was mitigated.

The ROD also called for the extraction and treatment of the contaminated groundwater so as to reduce the VOC concentrations to established federal and state groundwater standards in the shallow groundwater aquifer. Extraction of the contaminated groundwater took place between February and May 1997. Removing the source of the contamination in combination with the short-term groundwater extraction resulted in achieving the groundwater standards in the On-Property area in 2004. Groundwater standards were achieved in the Off-Property area in 2016; groundwater monitoring continued in the Off-Property area until 2017.

Based on the analysis of all of the groundwater monitoring wells and associated contaminant-specific data, it has been concluded that the groundwater remedy has achieved the ROD cleanup levels and data analysis indicates that the groundwater will continue to stay below these standards. Therefore, the response action is determined to be completed and the Region has determined that further groundwater monitoring at the site is no longer necessary.

The two remaining Off-Property area monitoring wells, RX-4 and RX-5, will be decommissioned in accordance with EPA guidelines to prevent the potential for tampering.

Region 2 considers the site to be suitable for unlimited use and unrestricted exposure. Therefore, Region 2 concludes that further policy FYRs are no longer required for this site and requests that the 2019 FYR line item for the site be removed from the Superfund Enterprise Management System.

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